1. Decide what to name the two reactions.
   1. For methanol desorption with a CH2O nearby, will call it 106p17
      1. Forward direction is desorption
   2. For CH2O methanol desorption with a methanol nearby, will call it 113p9
      1. Forward direction is desorption
2. Identify similar reactions (in terms of where the species are located for the co-adsorbates) to make it easier to add.
   1. For CH2O, I don’t see anything similar, so will probably make a template using the methanol case (106p17), and then apply it to CH2O as well.
   2. F109p2 is quite similar:
      1. CH3OH@CeS -> CH3OH(g) + CeS with coadsorbates of CH3O@CeS + CH3O@VS
      2. So for coadsorbates, just need to get rid of the vacancy species and convert CH3O into CH2O.
3. Making 106p17.
   1. First add all of the parameters needed for forward and reverse cases near top of file, using 106p7 as template.
      1. Using 81,048.0 kJ/mol as the activation energy for forward reaction.
   2. Next, use 109p2 as the template for the actual reaction.
      1. NOTE: in doing this, found that methanol syntax is more complicated than I remembered.
      2. I also forgot that we have the complication of 6 neighboring sites in the kMC, while that is not so obvious in DFT. So a methoxy with a formaldehyde neighbor actually means 1/3 neighboring sites are filled, so 2/6.
         1. Despite that, will do a 1/6 neighboring here, so process is not hard to get executed.
         2. Changing the species list to have only one neighbor… going from U19\_CH3O\_ionic to U28\_CH2O\_Ce4plus
4. Now making 113p9
   1. First add all of the parameters needed for forward and reverse cases near top of file using 113p7 as template for that part, with EaF113p9 = 42303.86
   2. Now, taking 106p17 as template.
      1. Again doing only 1/6 needed for neighboring site covered by MeOH (or CH2O)
         1. Just changing it so this time in actions the methanol doesn’t change and the CH2O does.